

Detection of MLSB phenotypes and inducible Clindamycin resistance in staphylococcus aureus isolates in-patients of Qazvin and Tehran teaching hospitals

M. Aslanimehr*

R.Yaghobfar**

A. Peymani*

*Assistant Professor of Medical Microbiology, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

**M.Sc. Student of Medical Microbiology, Department of Microbiology, Qazvin University of Medical Sciences, Qazvin, Iran

*Abstract

Background: Staphylococcus aureus is one of the major nosocomial pathogens. Clindamycin is the treatment of choice for staphylococcus aureus infections specially skin and soft tissue infections. Inducible resistance to clindamycin leads to treatment failure.

Objective: The aim of this study was to detect the cMLSb, iMLSb and MS phenotypes and inducible clindamycin resistance in staphylococcus aureus isolates from hospitalized patients in Qazvin and Tehran teaching hospitals.

Methods: In this descriptive molecular epidemiologic study, a total of 230 Staphylococcus aureus isolates were collected from hospitalized patients in Qazvin and Tehran teaching hospitals during 2012 and were identified by the standard laboratory methods. Then, detection of the femA gene was used to confirm identification of the isolates. Inducible resistance to clindamycin was tested using D-test. All procedures were performed in the microbiology laboratory and Cellular and Molecular Research Center affiliated to Qazvin University of Medical Sciences.

Findings: All isolates were positive to the femA gene. 85 isolates (37%) were resistant to erythromycin and clindamycin (the cMLSb phenotype), 15 isolates (6.5%) showed inducible resistance (the iMLSb phenotype), 103 isolates (44.7%) were sensitive to erythromycin and clindamycin, 24 isolates (10.4%) showed intermediate resistance to erythromycin, 10 isolates (4.3%) showed intermediate resistance to clindamycin and 3 isolates (1.3%) were resistant to erythromycin and susceptible to clindamycin (the MS phenotype).

Conclusion: With regards to the results, using D-test method with simultaneous disk diffusion method is recommended in hospital laboratories.

Keywords: Staphylococcus Aureus, Clindamycin, Drug Resistance

Corresponding Address: Amir Peymani, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, Shahid Bahonar Blvd., Qazvin, Iran

Email: A.peymani@gmail.com

Tel: +98-281-3324970

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